

## CHAPTER EIGHT

# INCOME AND SELECTED OUTDOOR RECREATION ACTIVITY MEASURES

The measures of participation in outdoor recreation used throughout this report are primarily on a per capita basis. Earlier sections have dealt in detail with specific activities for which the days of activity per person were examined across socioeconomic characteristics. Primary emphasis was placed upon the summer season of the year for which weather conditions are most uniform geographically. Participation in outdoor recreation, however, also can be measured in terms of the related money spent, distance traveled and time away from home. This section of the report is primarily concerned with annual per capita participation in outdoor recreation with particular reference to differences found across the income distribution of the population. Participation is measured in money, time, and distance as well as by the number of occasions on which people engaged in specific activities.

Since the participation measures used throughout are on a per capita basis and the income distribution shown is on a family basis, deductions become somewhat complicated. This is particularly true since the size of the family tends to increase with family income—about two persons per family in the less than \$1,500 income group to about four persons per family for incomes of \$15,000 or more. The present analysis is based on the per capita participation measures as they relate to the estimates of per capita family income within income classes in table 19.<sup>1/</sup> In-

cluded in the table are estimates of the percent of income and of days in the year spent away from home on vacations, outdoor recreation trips and outings, as well as the percent of annual leisure time available which is spent on outdoor recreation on these and all other occasions.

With respect to the charts shown on pages 67 thru 75, it should be noted that although both income and participation have been expressed on ratio scales the slope of a line describing equal relative changes rises approximately 20°, rather than 45°, from the horizontal as is indicated.

Specific outdoor recreation activities tend to fall into one of three groups when annual per capita participation is examined across family per capita income. Chart 1 shows that for playing outdoor games and sports, swimming, sightseeing, and motorboating, per capita participation increases with per capita income throughout the available family income classes. For swimming and motorboating it appears that a given proportionate increase in family income is associated with the same proportionate increase in per capita participation if some allowance is made for the preponderance of older people in the lower income classes. Playing games and sightseeing, on the other hand, appear less sensitive to changes in income: for these activities a given percent increase in family income is associated with a smaller percent increase in participation. It is unlikely that participation in any recreation activity would increase indefinitely with income. For these four activities, however, the income level at which participation levels off exceeds at least \$6,000.

Pleasure driving, attending sports events, picnicking, and camping are activities shown in chart 2 for which participation increases with income to the average income level and levels off or even dips for higher income groups. Participation in camping rises more sharply than any other activity across the

<sup>1/</sup>Per capita family income within the National Recreation Survey family income size classes was estimated from Bureau of the Census, Current Population Reports (Series T-60). Table 5 presents the total number of families and unrelated individuals, and persons within families: the percent distribution of each of these is shown by family income classes which are much more finely divided than those used in the National Recreation Survey.

Table 19. Income and time spent on outdoor recreation, by family income

| National Recreation Survey |  |   |  |  |
|----------------------------|--|---|--|--|
| Family income (\$1,000)    | Estimated per capita, income (\$1,000) | Percent of income spent on vacations, trips and outings | Percent of days available spent on vacation, trips and outings | Percent of reported available leisure time spent on outdoor recreation |
| All .....                  | 1.7                                    | 4.3   | 4.0  | 20   |
| Less than 1.5 .....        | .4                                     | 3.3   | 1.9  | 15   |
| 1.5-3 .....                | .8                                     | 3.4   | 2.7  | 16   |
| 3-4.5 .....                | 1.2                                    | 3.6   | 3.2  | 20   |
| 4.5-6 .....                | 1.5                                    | 4.2   | 4.0  | 19   |
| 6-8 .....                  | 1.9                                    | 4.7   | 4.8  | 21   |
| 8-10 .....                 | 2.4                                    | 4.5   | 5.2  | 23   |
| 10-15 .....                | 3.3                                    | 4.2   | 5.4  | 24   |
| 15 or more .....           | 5.8                                    | 5.6   | 7.9  | 23   |

CHART 1

RELATIONSHIP BETWEEN INCOME AND PARTICIPATION IN SELECTED ACTIVITIES FOR WHICH PARTICIPATION INCREASES WITH INCOME FOR BOTH LOWER AND HIGHER THAN AVERAGE INCOMES

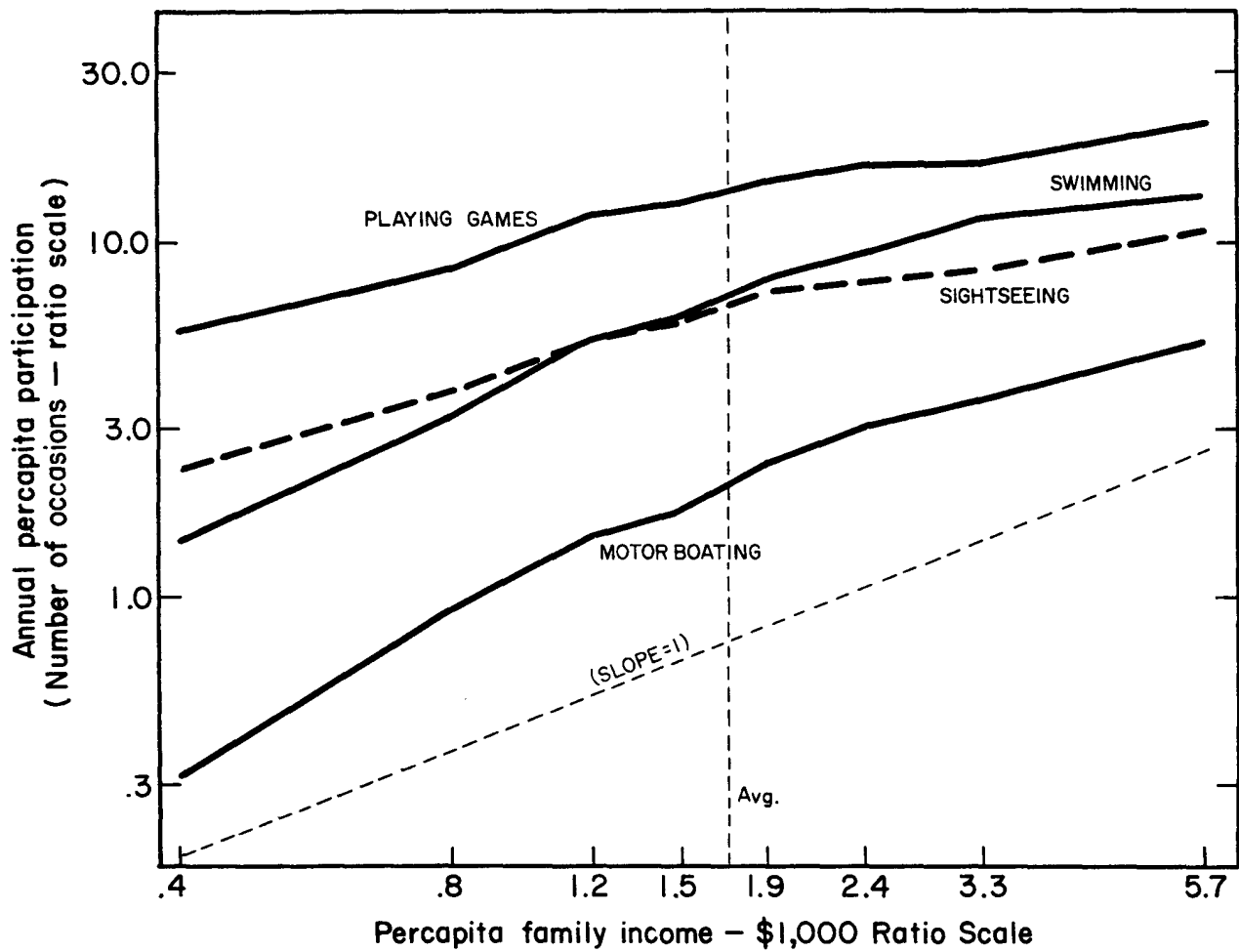
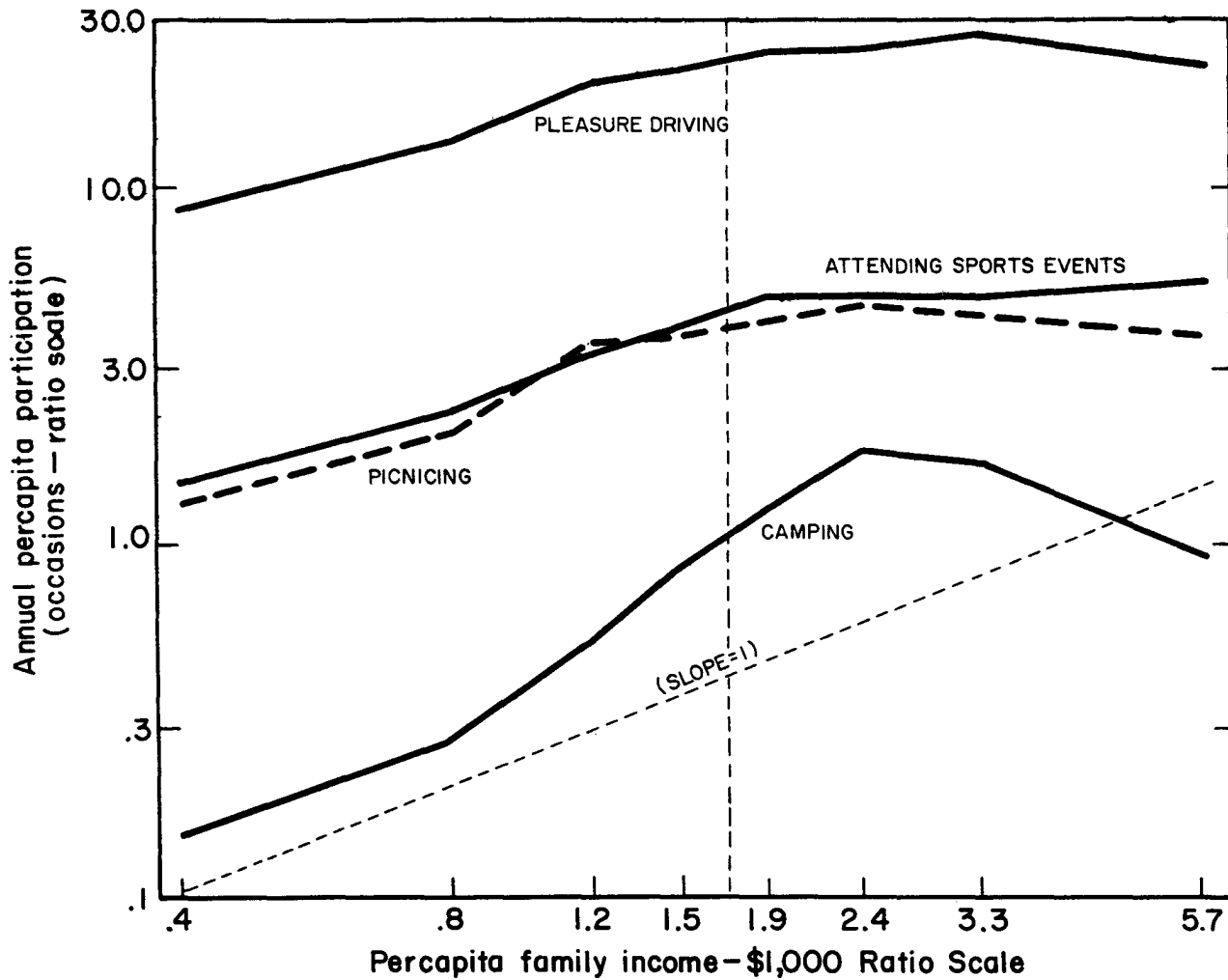


CHART 2

RELATIONSHIP BETWEEN INCOME AND PARTICIPATION IN SELECTED ACTIVITIES FOR WHICH PARTICIPATION INCREASES WITH INCOME FOR LOWER THAN AVERAGE INCOMES BUT LEVELS OFF OR DIPS FOR HIGHER THAN AVERAGE INCOMES



four middle income classes, but levels off at about \$2,500 and dips for higher per capita incomes. Pleasure driving, attending sports events, and picnicking are much less sensitive across below average incomes and remain high or turn down less sharply.

Participation in a third group of activities shown in chart 3—walking for pleasure, fishing, and hunting—show no consistent pattern of response to changes in per capita income. Walking for pleasure is reasonably level throughout the income range. If the lower two income classes are ignored, fishing appears negatively and hunting positively related to income, but for both these activities the effect is slight.

The use of number of occasions on which persons participate in specific outdoor recreation activities as the measure of participation, as has been done above, takes no account of the commitment of individuals to outdoor recreation in terms of time, money and travel. The unit of measurement is the same for the persons who take a 10 minute dip in a neighborhood swimming after work as for the person who spends the entire day at the beach. While walking or driving for pleasure, playing the more casual games, and picnicking may be engaged in during brief periods of time near home, many activities require special facilities not likely to be close at hand. Participation in sightseeing, swimming, boating, and particularly camping usually requires time to reach facilities and usually occurs away from home on special recreation occasions of at least 1 day's duration. Since many of the individually considered activities may be engaged in on any one occasion, expenditures, distance traveled, and time away from home represent measures of participation similar to sums of activity-days across activities. It should be noted that the expenditures, travel, and time involved in casual participation near home are not included in these measures, and that expenditures made in preparation for outdoor recreation occasions are likewise missing.

There is a close one-to-one relationship between expenditures away from home on all occasions combined and per capita family income across the income scale as may be seen on chart 4. Vacations account for the bulk of all money spent—about 70 percent of the total within each income class. A different picture emerges, however, when expenditures away from home on recreation trips are compared with those on outings: the rise is much sharper for trips and much slower than average for outings as income increases. Per capita expenditures on trips exceed those on outings for the highest income class while at the lower income levels, outings emerge as the more important type of occasion for the satisfaction of desired outdoor recreation.

Distance traveled on all recreation occasions increases with income but at a somewhat slower rate than was the case for expenditures (chart 5). Sixty percent of all travel occurs on vacations in most income groups. Although per capita travel on outings exceeds that of trips slightly for the higher income class, here again the importance of outings is much greater for those with low incomes. In terms of distance traveled, trips are most sensitive and outings least sensitive to changes in per capita family income.

Per capita time away from home while on outdoor recreation vacations, trips, or outings is less sensitive than either expenditures or distance traveled to changes in per capita income (chart 6). The importance of outings approximately equals that of vacations in terms of time away from home at all income levels except the very lowest and the very highest for each of which per capita vacation days somewhat exceed per capita outing days. Time spent away from home on trips rises with income slightly more sharply than the all occasion average.

Expenditures are most sensitive to changes in per capita income (distance traveled next, and time least) not only for all occasions combined but within each of the occasion types. Trips are the most sensitive occasions with respect to all three measures, followed by vacations with outings last. However, sensitivity of time away from home to changes in per capita income show little variation by occasion type. In making these observations, particular attention was paid to the middle income classes for which the age composition is much more homogeneous than at either of the income extremes.

#### RELATIONSHIP BETWEEN INCOME AND POSSESSION OF SELECTED OUTDOOR RECREATION EQUIPMENT

Table 5.47 presents information by family income classes on the percent of persons in households with selected outdoor recreation articles present, as well as the percent of persons using these articles during the previous year. The articles range in kind from rather personal items, which are not ordinarily used interchangeably even by members of the same family, to more costly equipment which probably involves a general family commitment.

Although articles may be present without being used, one indication of whether a particular article is personal—as opposed to family—equipment should be provided by comparing the “used” and “present in household” percentages.

Guns and golf sets appear the most personal of the selected articles considered: for all income groups combined the percent of persons reporting using these articles is about half of those reporting the article present. Roughly three-fifths of those reporting rods and reels present also report use, suggesting either that the nature of this item is less personal or a greater tendency toward multiple ownership by persons within families. Swimming pools and vacation cottages, for which more than four-fifths of all persons reporting ownership also report use, emerge as the most communal of the equipment considered.

The information on boating equipment in table 5.47 yields rather surprising results when use and ownership percentages are compared. Although boats are usually considered family rather than personal equipment, one-third of the persons in families involved in boat ownership reported failure to use this equipment. However, it is considered likely that there was a tendency to confuse “use” with “operation” so that at least some persons who went along as passengers failed to report use. Furthermore, the data suggest that this tendency may be correlated with income. Primarily for this reason, the analysis below is restricted to data on percent of persons with articles

CHART 3

RELATIONSHIP BETWEEN INCOME AND PARTICIPATION IN SELECTED ACTIVITIES FOR WHICH PER CAPITA PARTICIPATION IS LARGELY DETERMINED BY FACTORS OTHER THAN INCOME

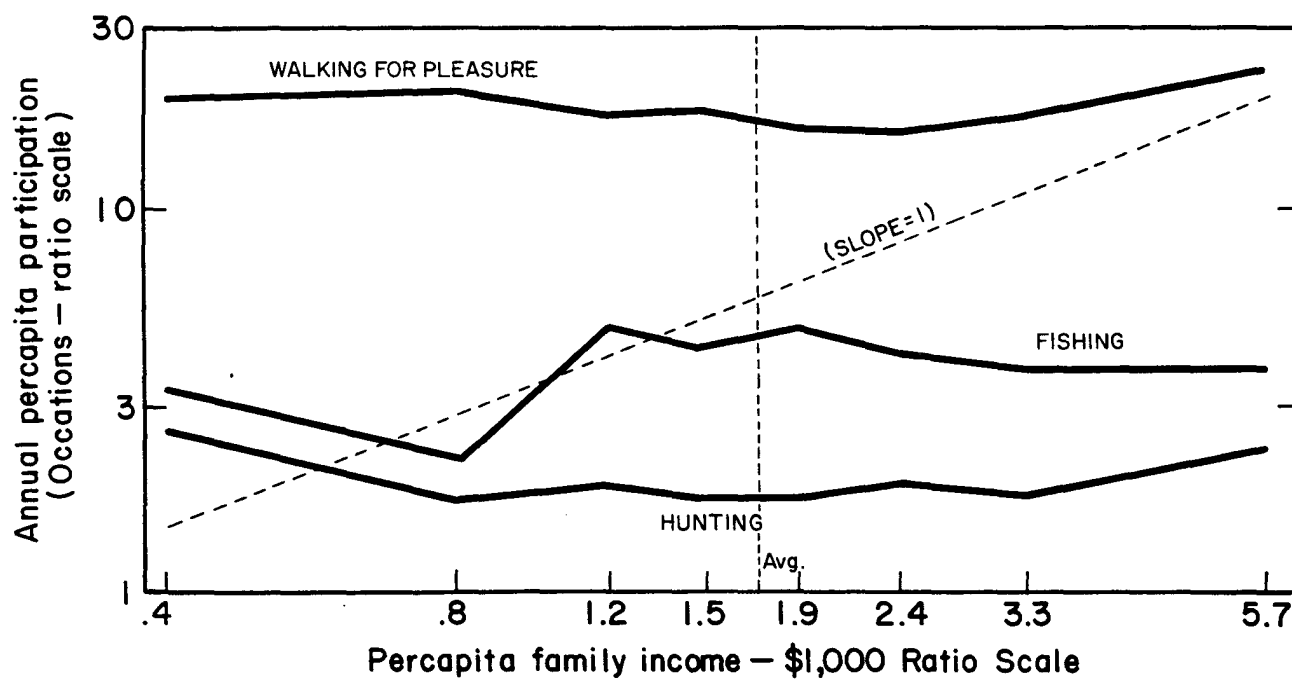


CHART 4

RELATIONSHIP BETWEEN INCOME AND EXPENDITURES  
ON OUTDOOR RECREATION OCCASIONS

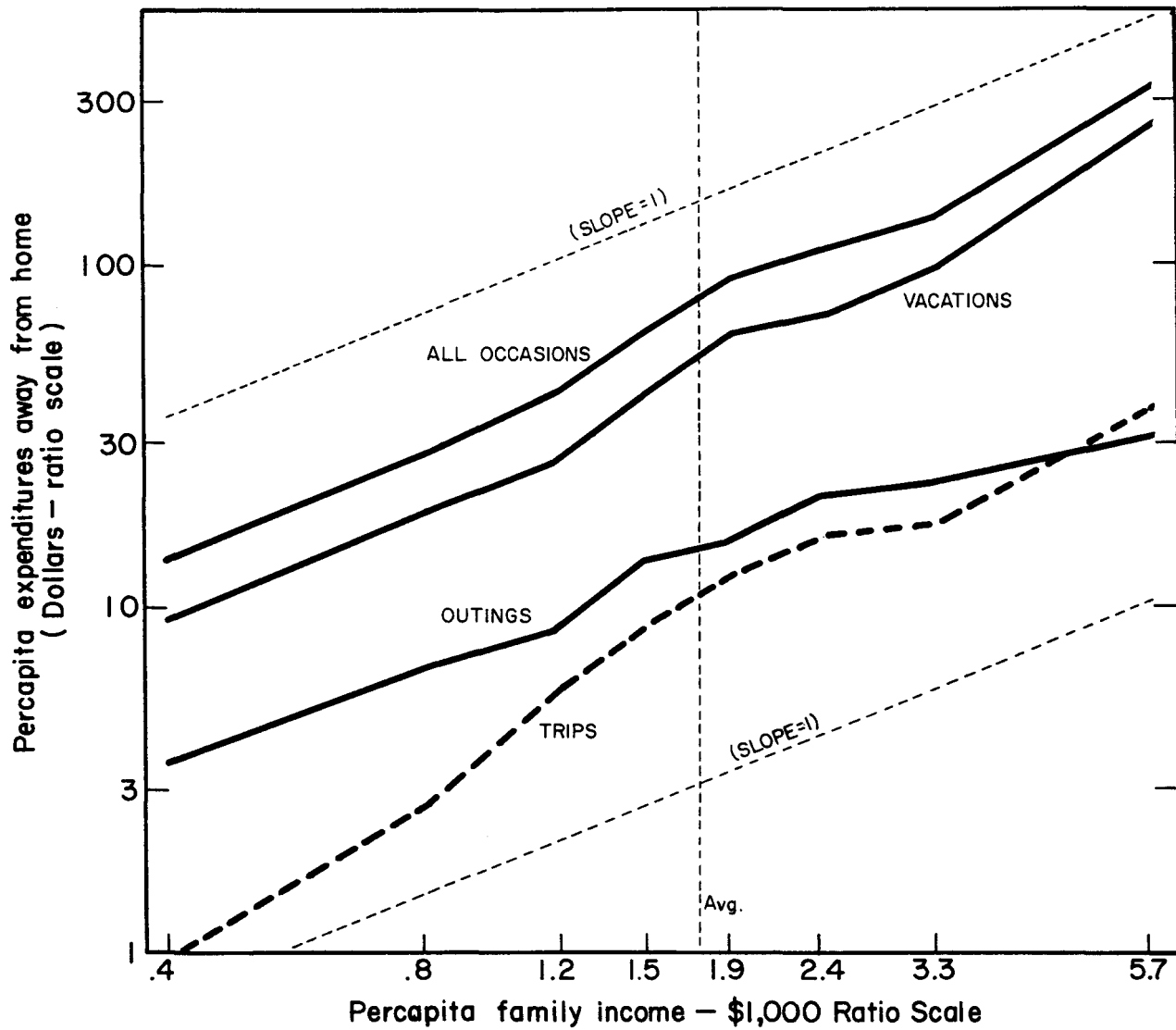


CHART 5

RELATIONSHIP BETWEEN INCOME AND DISTANCE TRAVELED  
ON OUTDOOR RECREATION OCCASIONS

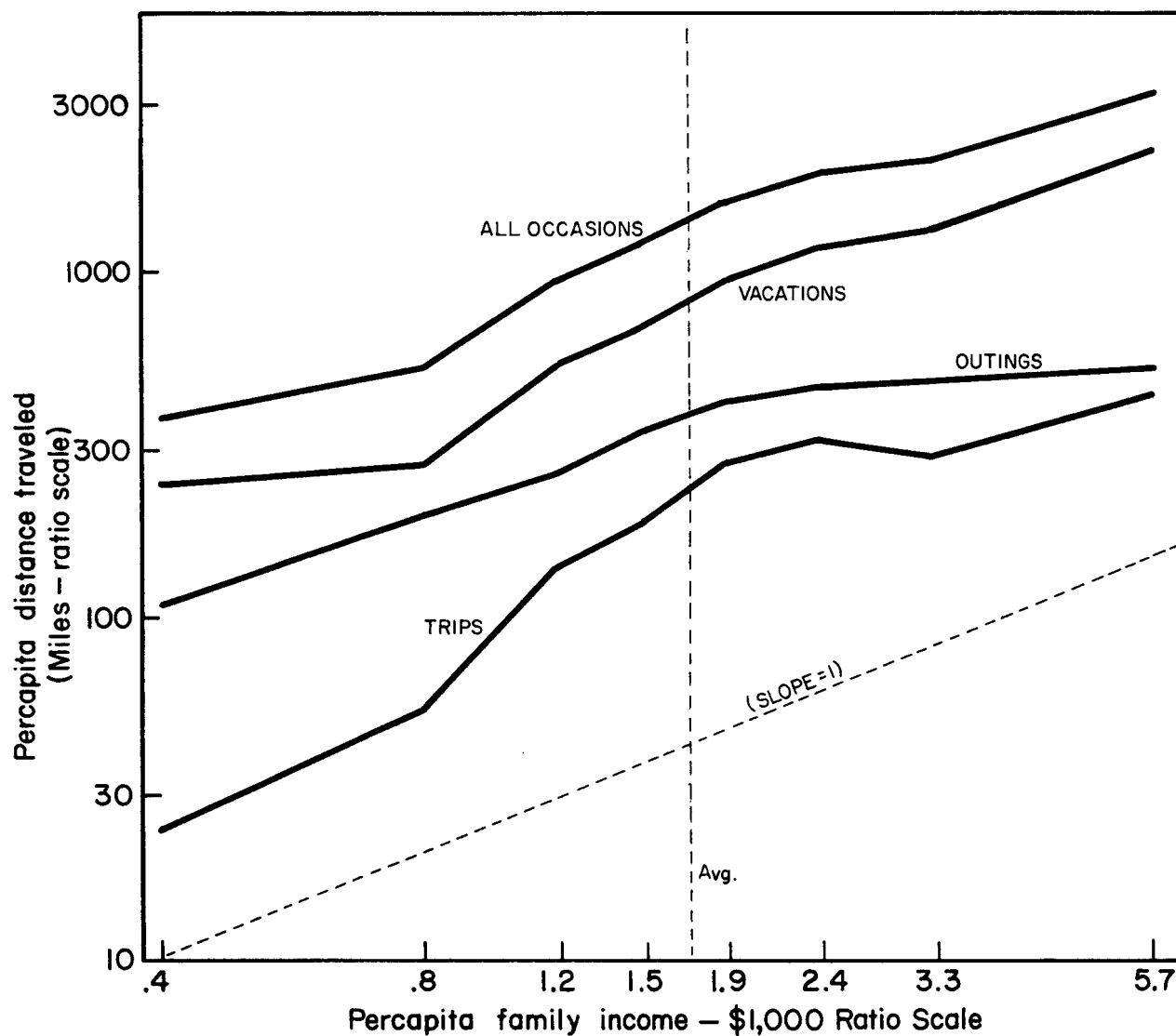
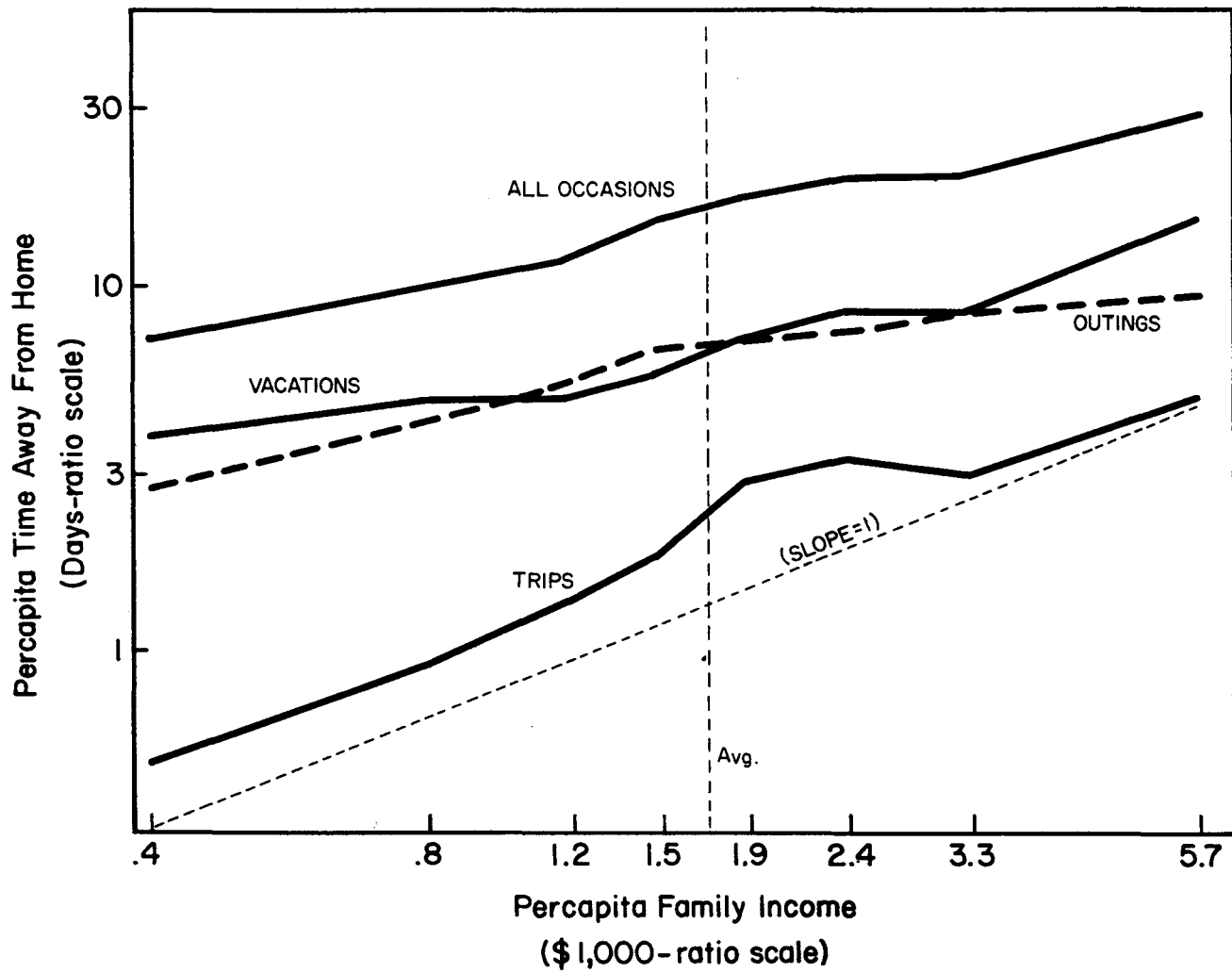


CHART 6

RELATIONSHIP BETWEEN INCOME AND TIME AWAY FROM HOME  
ON OUTDOOR RECREATION OCCASIONS



present, although it is recognized that, strictly speaking, these "exposure" percentages measure neither the demand for nor participation in outdoor recreation.

Chart 7 shows the percent of persons with selected articles present in household against per capita family income: in order to facilitate comparisons between the articles, as well as between this and previous charts, the same relative scales have been maintained. It will be noted that 100 percent provides the upper limit for each of these curves and that this upper limit is very closely approached in the case of family ownership of automobiles. In the previous charts discussed above there were no theoretical upper limits for per capita distance traveled or expenditures. Furthermore, the 365 days in the year, which provide a theoretical upper limit for participation in selected activities, and for time away from home, is sufficiently high to be safely ignored. However, in interpreting chart 7, although the upper limit is probably unimportant for most articles, this factor should be kept in mind particularly in the case of the automobile and perhaps the rod and reel.

The chart shows high sensitivity to changes in income with respect to ownership of swimming pools and vacation cottages (for higher than average per capita incomes) and for golf sets (across the middle income classes). The slope of the inboard motorboat curve is, somewhat surprisingly, close to one—that is, a given proportionate increase in per capita income associated with the same proportionate increase in ownership. The chart also suggests that factors other than income are probably more important in determining ownership of shotguns or rifles and, to a lesser extent, rods and reels.

Factors other than income which have an important bearing on the ownership and use of selective articles are probably similar to those found important with respect to participation in the activities which involve use of these articles. Age was found to have a particularly important effect in all activities. The degree of participation was also generally responsive to education, occupation, and race. One factor of particular importance has to do with the opportunity of persons to participate without large expenditures of time as well as money. Although this factor was not specifically measured in the National Recreation Surveys, an indication of opportunity is provided through the place of residence classification, since for many recreation activities—particularly for hunting and fishing—the more rural the environment the greater the opportunity to participate. The percent of persons exposed to presence of the selective items in households cross-classified by broad income classes and place of residence as provided in table 5.48 becomes of particular interest when viewed in this light. In interpreting this table some allowance should be

made for the greater preponderance of older persons in the family income class, \$4,500 or less.

For guns and fishing equipment, the place of residence has a much larger effect than differences in income on the exposure percentages. In the case of golf sets, on the other hand, income appears as the most important factor with the highest degree of exposure occurring in the highest income class with moderate urbanization; however, the variation by place of residence within income classes is only moderate. Observations made for golf also apply to swimming pool and, to a lesser extent, to vacation cottage and inboard motorboat ownership. Opportunity, as indicated by place of residence, and income appear to be approximately equally important with respect to family ownership of other types of boating equipment, tents, and vacation trailers.

It will be noted that about the same percentages of all persons reported fishing during June–August 1960, as reported use during the previous year of a family owned rod and reel. This agreement must be considered coincidental: On the one hand, fishing with handlines, bamboo poles, and rented or borrowed rods and reels would be reported as participation, while on the other, at least some persons fish only at times other than the summer, a season which includes less than half of the year's fishing occasions.

The agreement noted above for all persons combined is maintained only for persons with family incomes of \$10,000 or more and living in rural areas when the comparison is made within place of residence and broad family income classes as in table 20. Use of equipment other than family-owned rods and reels for fishing is indicated for significant proportions of persons with family incomes below \$4,500 and living in the less urbanized environments. Persons with family incomes of \$4,500 or more residing in urban areas within standard metropolitan areas show the greater tendency to fish with family-owned rod and reel during seasons other than the summer.

In the boating section of table 20, ownership of all types of boats and/or motors has been combined for comparison with summer participation in the much less comprehensive activity, "boating other than sailing or canoeing." The "exposure" rather than "use" percentages have been used because the problem of confusing operation with use is particularly acute for this class of equipment. Nevertheless, the participation percentages exceed the ownership percentages overall and within each available subclass of the population, reflecting the extent to which persons use rented equipment or engage in this activity as passengers of boat owning friends, or commercial lines. The tendency to engage in boating despite lack of family ownership of boating equipment is greatest among the lower family income more highly urbanized groups.

CHART 7

RELATIONSHIP BETWEEN INCOME AND POSSESSION OF SELECTED  
OUTDOOR RECREATION EQUIPMENT

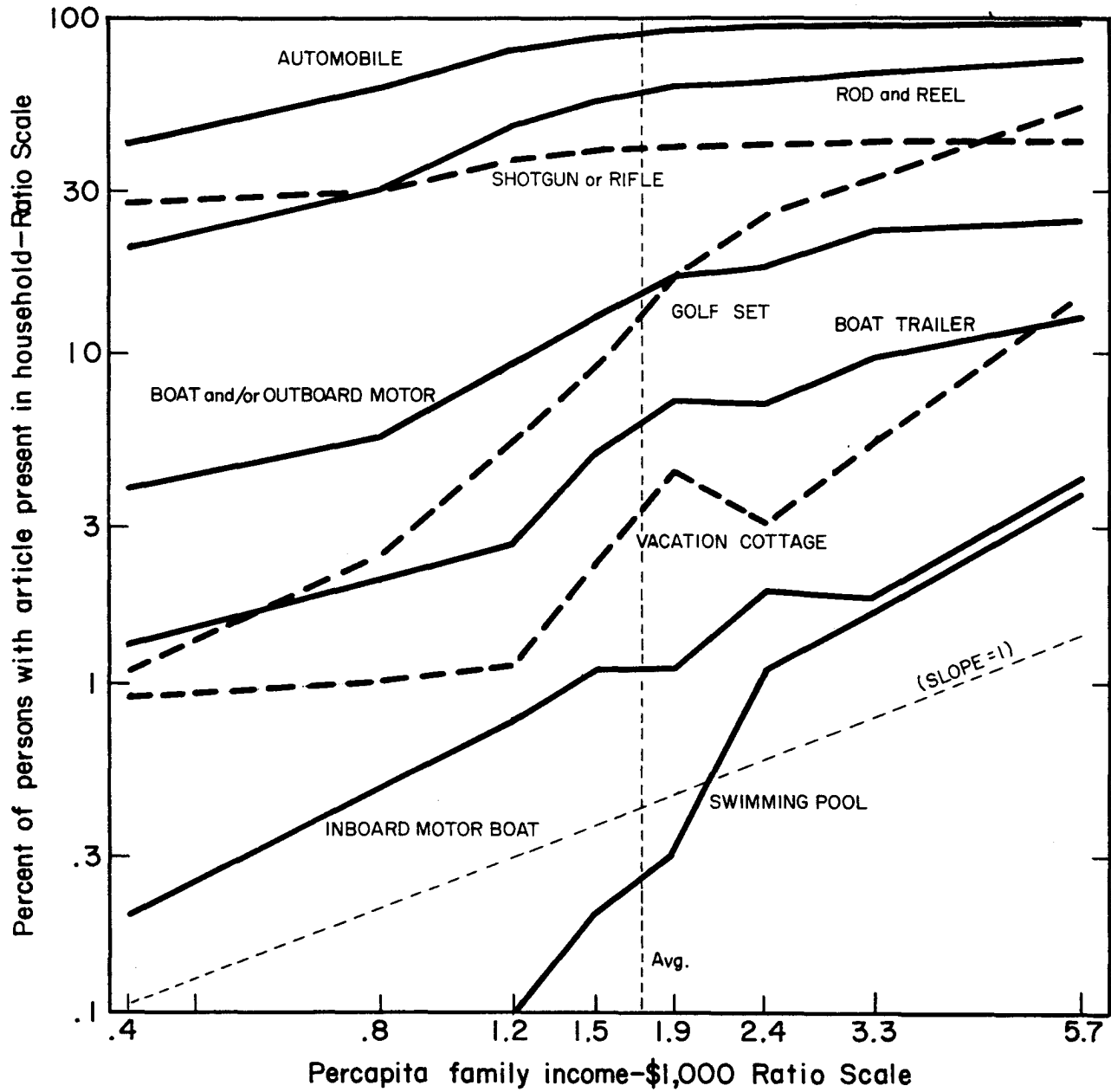


Table 20. Percent reporting use of rod and reel, ownership of boat and motor, and percent participation in fishing and boating by income and place of residence

National Recreation Survey

| Residence             | Family income (\$1,000)          |               |        |            |  |               |        |            |
|-----------------------|----------------------------------|---------------|--------|------------|--|---------------|--------|------------|
|                       | Percent reporting previous year— |               |        |            | Percent reporting June-August 1960 participation in— |               |        |            |
|                       | All                              | Less than 4.5 | 4.5-10 | 10 or more | All  | Less than 4.5 | 4.5-10 | 10 or more |
|                       | Use of rod and reel              |               |        |            | Fishing  |               |        |            |
| All .....             | 30.4                             | 21.2          | 36.3   | 38.8       | 29   | 25            | 32     | 36         |
| Urban—In SMA:         |                                  |               |        |            |  |               |        |            |
| Over 1 million .....  | 23.0                             | 12.3          | 26.2   | 31.8       | 19   | 12            | 22     | 26         |
| Under 1 million ..... | 28.8                             | 16.6          | 34.8   | 39.6       | 26   | 17            | 32     | 35         |
| Not in SMA .....      | 32.6                             | 22.7          | 41.0   | 40.7       | 32   | 29            | 36     | 28         |
| Rural .....           | 35.0                             | 25.7          | 43.4   | 44.9       | 36   | 32            | 39     | 45         |
|                       | Ownership of boats and/or motors |               |        |            | Boating other than sailing or canoeing               |               |        |            |
|                       | All                              | Less than 4.5 | 4.5-10 | 10 or more | All  | Less than 4.5 | 4.5-10 | 10 or more |
| All .....             | 14.0                             | 7.0           | 16.6   | 26.3       | 22   | 12            | 27     | 40         |
| Urban—In SMA:         |                                  |               |        |            |  |               |        |            |
| Over 1 million .....  | 8.8                              | 3.5           | 9.0    | 17.4       | 18   | 13            | 18     | 31         |
| Under 1 million ..... | 13.4                             | 4.1           | 16.6   | 27.0       | 26   | 11            | 33     | 47         |
| Not in SMA .....      | 14.5                             | 6.5           | 19.4   | 32.1       | 22   | 13            | 30     | 39         |
| Rural .....           | 17.4                             | 9.7           | 21.6   | 33.4       | 23   | 12            | 31     | 44         |